



Possum Point Pond Closure

DRAFT Pond D Toe Drain & Outfall 010 Sampling Plan

Virginia Electric and Power Company
d/b/a Dominion Virginia Power
Possum Point Power Station
Dumfries, Virginia

GAI Project Number: C150132.00, Task 050

January 2016



Prepared by: GAI Consultants, Inc.
Richmond Office
4198 Cox Road, Suite 114
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Prepared for: Virginia Electric and Power Company
d/b/a Dominion Virginia Power
5000 Dominion Boulevard
Glen Allen, Virginia 23060-3308

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Table of Contents

[TOC \\h \\z \\t "gai - Heading 1,1,gai - Heading 2,2,gai - heading 3,3"]© 2016 GAI Consultants, Inc.

1.0 Executive Summary

Dominion has requested GAI Consultants, Inc. (GAI) to collect samples of Pond D Toe Drain & Outfall 010 discharges at Possum Point Power Station for analysis. Collecting two samples at both locations (during dry periods when precipitation is not occurring) will provide a dry weather basis for comparison of the quality of the Pond D Toe Drainage and the Outfall 010 discharges. Pond D Toe Drain sampling point is at an existing inlet north of Possum Point Road where the two foot square opening for the toe drain directs underflow from the Pond D dam. Outfall 010 sampling point is at the outlet of the 72" Culvert from said existing inlet that discharges into Quantico Creek – South of Possum Point Road. GAI has arranged to collect samples for analysis of the Pond D Toe Drain & Outfall 010.

2.0 Field Sampling Procedures

GAI is utilizing the bottles and testing services of Air Water & Soil Laboratories, Inc., located in Richmond, Virginia (VA), for all constituents except toxicity tests. Coastal Bioanalysts, Inc., located in Gloucester Courthouse, VA, will perform the biological/toxicity tests. Bottles/labels, Chain of Custody Forms, and coolers will be shipped to GAI's Richmond, VA office from Air Water & Soil Laboratories, Inc. and Coastal Bioanalysts, Inc. Chain of Custody forms will be filled out as much as is practical prior to arriving onsite.

GAI employees, Allison McCurdy and Brian Bullock, will be arriving on-site at Possum Point to collect two samples each of the Pond D Toe Drainage and Outfall 010 discharges for analysis. All activities will be coordinated with Dominion Possum Point in advance of arriving onsite. A Health and Safety Plan (HASP) will be completed and approved by GAI Health and Safety and the GAI Project Manager prior to arriving onsite. Samples will be couriered to the laboratories the same day for analysis.

2.1 Preferred Sampling Method

2.1.1 Outfall 010

A peristaltic pump with silicon and poly tubing will be used to collect the samples. The poly suction tubing will be secured to copper pipe in order to position the suction inlet in the 72" diameter culvert. Once the tubing is held in position, begin pumping at a low power setting, letting any upset debris clear the line before collection of the samples. Careful attention is necessary to hold the suction tubing in place so as not to disturb the sediment collected in the culvert. After the collection of the first set of samples, all tubing will be replaced before beginning the second round of sampling. Nitrile gloves, steel toed boots, hard hats, and eye protection will be worn in accordance with Dominion property regulations for PPE and in accordance with safe and careful sampling procedure protocols.

Equipment Required:

- ▶ Peristaltic Pump
- ▶ 2X – 10' of tubing
- ▶ 2X – 5' PVC tubing (0.5"-1" Diameter PVC pipe with couplings)
- ▶ 2X – 90° Bend Fitting
- ▶ Duct Tape (to secure PVC & poly tubing as needed)

2.1.2 Pond D Toe Drain

A peristaltic pump with silicon and poly tubing will be used to collect the samples. The poly tubing will be secured to an appropriately length (20') PVC tube in order to position the tubing at the two foot square opening. Once the tubing is in position, begin pumping, letting any

upset debris to clear the line before collection of the samples. After the collection of the first set of samples, all tubing will be replaced before beginning the second round of sampling. Nitrile gloves, steel toed boots, hard hats, and eye protection will be worn in accordance with Dominion property regulations for PPE and in accordance with safe and careful sampling procedure protocols.

Equipment Required:

- ▶ Peristaltic Pump
- ▶ 2X – 20' of tubing
- ▶ 2X – 20' PVC tubing (0.5"-1" Diameter PVC pipe with couplings)
- ▶ 2X – 90° Bend Fitting
- ▶ High-Power Flashlight
- ▶ Duct Tape

2.2 Backup Sampling Method No. 1

2.2.1 Outfall 010

A peristaltic pump with silicon and poly tubing will be used to collect the samples. A weight will be secured to the poly tubing, approximately six inches, above the 90° bend. The weighted poly tube will allow for the tubing to be placed in the 72" diameter culvert. Once the tubing is in position, begin pumping at a low power setting, letting any upset debris to clear the line before collection of the samples. After the collection of the first set of samples, all tubing will be replaced before beginning the second round of sampling. Nitrile gloves, steel toed boots, hard hats, and eye protection will be worn in accordance with Dominion property regulations for PPE and in accordance with safe and careful sampling procedure protocols.

Equipment Required:

- ▶ Peristaltic Pump
- ▶ 2X – 10' of Tubing
- ▶ Poly Tube Weights 2X – 90° Bend Fitting

2.2.2 Pond D Toe Drain

A peristaltic pump with silicon and poly tubing will be used to collect the samples. A weight will be secured to the poly tubing, approximately six inches, above the 90° bend. The weighted poly tube will allow for the tubing to be placed at the two foot opening. Once the tubing is in position, begin pumping, letting any upset debris to clear the line before collection of the samples. After the collection of the first set of samples, all tubing will be replaced before beginning the second round of sampling. Nitrile gloves, steel toed boots, hard hats, and eye protection will be worn in accordance with Dominion property regulations for PPE and in accordance with safe and careful sampling procedure protocols.

Equipment Required:

- ▶ Peristaltic Pump
- ▶ 2X – 20' of Tubing
- ▶ Poly Tube Weights
- ▶ 2X – 90° Bend Fitting
- ▶ High-Power Flashlight

2.3 Backup Sampling Method No. 2

2.3.1 Pond D Toe Drain

A wired-rimmed collapsible bucket will be lowered into the inlet, positioning it to capture water flowing out of the underdrain system. As the bucket collects the water, use a peristaltic pump with a weighted tube in order to pump the water into the collection bottles. Once the tubing is in position, begin pumping, letting any upset debris to clear the line before collection of the samples. After the collection of the first set of samples, all tubing will be replaced before beginning the second round of sampling. Nitrile gloves, steel toed boots, hard hats, and eye protection will be worn in accordance with Dominion property regulations for PPE and in accordance with safe and careful sampling procedure protocols.

Equipment Required:

- ▶ Peristaltic Pump
- ▶ 2X – 20' of Tubing
- ▶ Poly Tube Weights
- ▶ 20' of Rope
- ▶ 2X Wire Rimmed Collapsible Buckets
- ▶ High-Power Flashlight

3.0 Analytical Testing Summary

The following parameters are to be analyzed by Air Water & Soil Laboratories, Inc.:

Table 1

Constituent	No. of Bottles per Sample ID	Preservant	Hold Time	Analytical Method
Chloride	(1) – 1 L plastic	<6 °C	28 days	EPA 300.0
pH			15 minutes	S4500HB-00
Total Suspended Solids	(1) – 1 L plastic	<6 °C	7 days	S2540D-11
Oils and Grease	(2) – 1 L amber	HCl	28 days	EPA 1664B
Aluminum, Total	(1) – 500 mL plastic	HNO ₃	6 months	EPA 200.7
Antimony, Total				EPA 200.8
Arsenic, Total				EPA 200.8
Barium, Total				EPA 200.7
Beryllium, Total				EPA 200.7
Boron, Total				EPA 200.7
Cadmium, Total	(1) – 500 mL plastic	HNO ₃	6 months	EPA 200.8
Chromium III, Total				Calculation
Cobalt, Total				EPA 200.7
Copper, Total				EPA 200.8
Iron, Total				EPA 200.7
Hardness, Total (as CaCO ₃)	(1) – 500 mL plastic	HNO ₃	6 months	EPA 200.7
Lead, Total				EPA 200.8
Mercury, Total				EPA 245.1
Molybdenum, Total				EPA 200.7
Nickel, Total				EPA 200.8
Selenium, Total	(1) – 500 mL plastic	HNO ₃	6 months	EPA 200.8
Silver, Total				EPA 200.8
Thallium, Total				EPA 200.8
Vandium, Total				EPA 200.7
Zinc, Total				EPA 200.8
Chromium VI, Total	(1) – 500 mL plastic	<6 °C	24 hours	SM3500-Cr B

Table 1 (Continued)

Constituent	No. of Bottles per Sample ID	Preservant	Hold Time	Analytical Method
Aluminum, Dissolved ¹	(1) – 500 mL plastic	HNO ₃	6 months	EPA 200.7
Antimony, Dissolved ¹				EPA 200.8
Arsenic, Dissolved ¹				EPA 200.8
Barium, Dissolved ¹				EPA 200.8
Beryllium, Dissolved ¹				EPA 200.7
Boron, Dissolved ¹	(1) – 500 mL plastic	HNO ₃	6 months	EPA 200.7
Cadmium, Dissolved ¹				EPA 200.8
Chromium III, Dissolved ¹				EPA 200.7
Cobalt, Dissolved ¹				EPA 200.7
Copper, Dissolved ¹	(1) – 500 mL plastic	HNO ₃	6 months	EPA 200.8
Iron, Dissolved ¹				EPA 200.7
Lead, Dissolved ¹				EPA 200.8
Mercury, Dissolved ¹	(1) – 500 mL plastic	HNO ₃	6 months	EPA 245.1
Molybdenum, Dissolved ¹				EPA 200.7
Nickel, Dissolved ¹				EPA 200.8
Selenium, Dissolved ¹				EPA 200.8
Silver, Dissolved ¹				EPA 200.8
Thallium, Dissolved ¹				EPA 200.8
Vanadium, Dissolved ¹				EPA 200.8
Zinc, Dissolved ¹				EPA 200.8
Chromium VI, Dissolved ¹	(1) – 500 mL plastic	N/A	24 hours	EPA 200.7
Ammonia, as N	(1) – 250 mL plastic	H ₂ SO ₄	28 days	EPA 350.1
Nitrate and Nitrite, as N				D6919-09
Total Kjeldahl Nitrogen				S4500NH3G-11
Total Phosphorus				SM4500-P E

Notes:

¹ Samples for dissolved constituent analyses will be filtered in the field prior to preservation.

² N/A – Not Applicable

The following parameters are to be analyzed by Coastal Bioanalysts, Inc.:

Table 2

Constituent	No. of Bottles per Sample ID	Preservant	Hold Time	Analytical Method
48-hr Static Acute Toxicity test using <i>Ceriodaphnia dubia</i>	(1) - 1 gal plastic	N / A	36 hours	40 CFR 136.3 EPA 2002.0
48-hr Static Acute Toxicity test using <i>Pimephales promelas</i>		N / A	36 hours	40 CFR 136.3 EPA 2000.0
Chronic 3-Brood Static Renewal Survival and Reproduction Test using <i>Ceriodaphnia dubia</i>	(2-6) – 1 gal plastic	N / A	36 hours	40 CFR 136.3 EPA 1002.0
Chronic 7-Day Static Renewal Survival and Growth Test using <i>Pimephales promelas</i>		N / A	36 hours	40 CFR 136.3 EPA 1000.0

Notes:

- ¹ Samples for dissolved constituent analyses will be filtered in the field prior to preservation.
- ² N/A – Not Applicable

4.0 Proposed Schedule

GAI proposes the following schedule for sampling to be conducted:

Table 3

Sampling Days	Pond D Toe Drain & Outfall 010 - Sampling to be Conducted		
January 12, 2016 (Tuesday)	Chronic Toxicity Samples (one sample each for analysis using <i>Ceriodaphnia dubia</i> and <i>Pimephales promelas</i>)	N / A	N / A
January 13, 2016 (Wednesday)	Chronic Toxicity Samples (one sample each for analysis using <i>Ceriodaphnia dubia</i> and <i>Pimephales promelas</i>)	N / A	N / A
January 15, 2016 (Friday)	Chronic Toxicity Samples (one sample each for analysis using <i>Ceriodaphnia dubia</i> and <i>Pimephales promelas</i>)	Acute Toxicity Samples (one sample each for analysis using <i>Ceriodaphnia dubia</i> and <i>Pimephales promelas</i>)	Four Samples sets (Two at Each Location) for all Constituents being Analyzed by Air Water & Soil Laboratories, Inc.

Notes:

¹ N/A – Not Applicable